

WHAT IS CLAIMED IS:

1. A polyoxyalkylene monoalkyl ether represented by formula [1]:



wherein  $R^1$  represents a hydrocarbon group having 1 to 18 carbon atoms, AO represents an oxyalkylene group having 2 to 4 carbon atoms,  $n$  represents an average number of addition of the oxyalkylene group which is 5 to 500, a plurality of AO may represent the same type of oxyalkylene group or different types of oxyalkylene groups and, when the plurality of AO represent different types of oxyalkylene groups, the different types of oxyalkylene groups may be arranged randomly or in blocks,

wherein a chromatogram of the polyoxyalkylene monoalkyl ether obtained in accordance with gel permeation chromatography which exhibits a relation between an intensity of a refractive index obtained by a differential refractometer and an elution time satisfies a relation expressed by equation (A):

$$S_1/S_0 \leq 0.15 \quad \dots (A)$$

wherein  $S_1$  represents an area under a portion of the chromatogram from start of elution to an earliest elution time when the intensity of a refractive index has a value of  $L/3$ ,  $L$  representing a shortest distance between a greatest maximum point of the intensity of a refractive index and a base line, and  $S_0$  represents an area under a portion of the chromatogram from start of elution to an elution time when the intensity of a refractive index has the greatest maximum value.

2. A process for producing a polyoxyalkylene monoalkyl ether described

in Claim 1 comprising adjusting a content of water in a reactor, which is used in addition polymerization of alkylene oxides having 2 to 4 carbon atoms with addition to a monohydric alcohol, so as to satisfy equation (B):

$$\text{Content of water in the reactor} = W_i \times (C_f - C_i) / V \leq 10 \quad \dots (B)$$

wherein the content of water in the reactor is obtained by placing a solvent having a content of water  $C_i$  (ppm) in an amount  $W_i$  (g) in the reactor having an inner volume  $V$  (ml), stirring the solvent in the reactor to clean the reactor, removing the solvent used for the cleaning from the reactor and obtaining a content of water  $C_f$  (ppm) in the removed solvent.

3. A polymerizable polyoxyalkylene monoalkyl ether derivative prepared by using a polyoxyalkylene monoalkyl ether described in Claim 1 as a raw material and represented by formula [2]:



wherein  $R^1$  represents a hydrocarbon group having 1 to 18 carbon atoms,  $R^2$  represents an unsaturated hydrocarbon group having 2 to 4 carbon atoms, AO represents an oxyalkylene group having 2 to 4 carbon atoms,  $n$  represents an average number of addition of the oxyalkylene group which is 5 to 500, a plurality of AO may represent the same type of oxyalkylene group or different types of oxyalkylene groups and, when the plurality of AO represent different types of oxyalkylene groups, the different types of oxyalkylene groups may be arranged randomly or in blocks.

4. A polymerizable polyoxyalkylene monoalkyl ether derivative prepared by using a polyoxyalkylene monoalkyl ether described in Claim 1 as a raw material and represented by formula [3]:



wherein  $R^1$  represents a hydrocarbon group having 1 to 18 carbon atoms,  $R^3$  represents acryloyl group or methacryloyl group, AO represents an oxyalkylene group having 2 to 4 carbon atoms, n represents an average number of addition of the oxyalkylene group which is 5 to 500, a plurality of AO may represent the same type of oxyalkylene group or different types of oxyalkylene groups and, when the plurality of AO represent different types of oxyalkylene groups, the different types of oxyalkylene groups may be arranged randomly or in blocks.

5. A homopolymer which is obtained by polymerization of a polymerizable polyoxyalkylene monoalkyl ether derivative represented by formula [3] described in Claim 4 and has a molecular weight of 1,000 to 300,000.

6. A copolymer which is obtained by copolymerization of 5 to 95% by mol of a polymerizable polyoxyalkylene monoalkyl ether derivative represented by formula [2] described in Claim 3 and 95 to 5% by mol of a monomer copolymerizable with the polymerizable polyoxyalkylene monoalkyl ether derivative and has a molecular weight of 500 to 100,000.

7. A copolymer according to Claim 6, wherein  $R^2$  in formula [2] representing the polymerizable polyoxyalkylene monoalkyl ether derivative represents an unsaturated hydrocarbon group having 3 to 4 carbon atoms and the monomer copolymerizable with the polymerizable polyoxyalkylene monoalkyl ether derivative is an unsaturated carboxylic acid.

8. A copolymer which is obtained by copolymerization of 5 to 95% by mol of a polymerizable polyoxyalkylene monoalkyl ether derivative represented by formula [3] described in Claim 4 and 95 to 5% by mol of a monomer copolymerizable with the polymerizable polyoxyalkylene monoalkyl ether derivative and has a molecular weight of 500 to 100,000.

9. A copolymer according to Claim 8, wherein the monomer copolymerizable with the polymerizable polyoxyalkylene monoalkyl ether derivative represented by formula [3] is an unsaturated carboxylic acid.

10. A dispersant comprising a copolymer described in Claim 6.

11. A dispersant comprising a copolymer described in Claim 7.

12. A dispersant comprising a copolymer described in Claim 8.

13. A dispersant comprising a copolymer described in Claim 9.